

SEQUENCE LISTING

<110> Wittekind, Michael

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<120> Modified Forms of Hepatitis C NS3 Protease for
Facilitating Inhibitor Screening and Structural Studies
of Protease:Inhibitor Complexes

<130> DB17Sequences

<140> 09/478,479

<141> 2000-01-06

<150> 60/115,271

<151> 1999-01-08

<160> 26

<170> PatentIn Ver. 2.0

<210> 1

<211> 182

<212> PRT

<213> Hepatitis C virus

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Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly

20 25 30

Glu Val Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys

35 40 45

Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr

50 55 60

Ile Ala Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp

65 70 75 80

Lys Asp Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr

85 90 95

Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala

100 105 110

Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu

115 120 125

Ser Pro Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu

130 135 140

Leu Cys Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys

145 150 155 160

Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu

165 170 175

Glu Thr Thr Met Arg Ser

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<210> 2

<211> 549

<212> DNA

<213> Hepatitis C virus

<400> 2

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120

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240

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360

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<210> 3

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<212> PRT

<213> Hepatitis C virus

<400> 3

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Val Leu Asn

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Gly Ala Tyr Ala Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr

20 25 30

Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Ile

35 40 45

Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn Gly Val

50 55 60

Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala Ser Pro

65 70 75 80

Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp Leu Val

85 90 95

Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys Thr Cys

100 105 110

Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro

115

120

125

Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro

130

135

140

Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ala

145

150

155

160

Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val

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Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr Thr Met

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Arg Ser Pro

195

<210> 4

<211> 588

<212> DNA

<213> Hepatitis C virus

<400> 4

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atcaacgggtg tttgctggac cgtttaccac ggtgctggta cccgtaccat cgcttccccg
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420

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480

ggtcacgctg ttggtatctt ccgtgctgct gtttgcaccc gtggtggtgc taaagctggt
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588

<210> 5

<211> 15

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<213> Hepatitis C virus

<400> 5

Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr

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<212> PRT

<213> Hepatitis C virus

<400> 6

Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln Glu Thr Ser Gln Thr

1 5 10 15

<210> 7

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 7

Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln Gln Thr Ser Glu Thr

1 5 10 15

<210> 8

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 8

Gln Gln Thr Arg Gly Asn Gln Gly Cys Glu Lys Thr Ser Glu Thr

1 5 10 15

<210> 9

<211> 15

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<213> Hepatitis C virus

<400> 9

Gln Gln Thr Arg Gly Glu Gln Gly Cys Gln Lys Thr Ser His Thr
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<210> 10

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 10

Gln Gln Thr Arg Gly Glu Gln Gly Cys Asp Glu Thr Ser Glu Thr
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<210> 11

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 11

Gln Gln Thr Arg Gly Glu Glu Gly Cys Glu Gln Thr Ser Glu Thr
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<210> 12

<211> 195

<212> PRT

<213> Hepatitis C virus

<400> 12

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Val Leu Asn

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Gly Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln Glu Thr

20 25 30

Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Ile

35 40 45

Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn Gly Val

50 55 60

Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala Ser Pro

65 70 75 80

Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp Leu Val

85 90 95

Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys Thr Cys

100 105 110

Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro

115 120 125

Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro

130 135 140
 Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ala
 145 150 155 160
 Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val
 165 170 175
 Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr Thr Met
 180 185 190

Arg Ser Pro
 195

<210> 13

<211> 588

<212> DNA

<213> Hepatitis C virus

<400> 13

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 120

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 180

atcaacggtg tttgctggac cgtttaccac ggtgctggta cccgtaccat cgcttccccg
 240

aaagggtccgg ttatccagat gtacaccaac gttgacaaag acctgggttg ttggccggct
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ccgcagggtt cccgttcctt gaccccggtc acctgcgggt cctccgacct gtacctggtt
360

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420

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480

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<210> 14

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 14

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser

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Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln

20 25 30

Glu Thr Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val

35 40 45

Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn

50 55 60

Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala

65 70 75 80

Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp

85

90

95

Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys

100

105

110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val

115

120

125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro

130

135

140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys

145

150

155

160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg

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175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr

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Thr Met Arg Ser Pro

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<210> 15

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<212> DNA

<213> Hepatitis C virus

<400> 15

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120

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180

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<210> 16

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 16

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Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln

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30

Glu Thr Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val

35

40

45

Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Cys Ile Asn

50

55

60

Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala

65

70

75

80

Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp

85

90

95

Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys

100

105

110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val

115

120

125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro

130

135

140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys

145

150

155

160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg

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Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr

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Thr Met Arg Ser Pro

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<210> 17

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 17

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120

aaaaaccagg ttgaagggtga agttcagatc gtttccaccg ctaccagac cttcctggct
180

acctgcatca acggtgtttg ctggaccgtt taccacggtg ctggtaccg taccatcgt
240

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300

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360

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420

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480

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<210> 18

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 18

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Glu Thr Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val

35 40 45

Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Ser Ile Asn

50 55 60

Gly Val Leu Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala

65 70 75 80

Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp

85 90 95

Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys

100 105 110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val

115

120

125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro

130

135

140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys

145

150

155

160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Ser Thr Arg

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Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr

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Thr Met Arg Ser Pro

195

<210> 19

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 19

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420

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480

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<210> 20

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<212> PRT

<213> Hepatitis C virus

<400> 20

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser

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Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Gln Gly Cys Gln

20 25 30

Lys Thr Ser His Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val

35 40 45

Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Ser Ile Asn

50

55

60

Gly Val Leu Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala

65

70

75

80

Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp

85

90

95

Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys

100

105

110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val

115

120

125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro

130

135

140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys

145

150

155

160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Ser Thr Arg

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170

175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr

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Thr Met Arg Ser Pro

195

<210> 21

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 21

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<210> 22

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 22

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser

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Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Gln Gly Thr Gln

20 25 30

Lys Thr Ser His Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val

35 40 45

Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Ser Ile Asn

50 55 60

Gly Val Leu Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala

65 70 75 80

Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp

85 90 95

Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys

100 105 110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val

115 120 125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro

130 135 140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys

145 150 155 160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Ser Thr Arg

165 170 175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr

180 185 190

Thr Met Arg Ser Pro

195

<210> 23

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 23

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180

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240

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420

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480

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<210> 24

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<212> PRT

<213> Hepatitis C virus

<400> 24

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20 25 30

Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val

35 40 45

Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn

50 55 60

Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala

65 70 75 80

Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp

85

90

95

Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys

100

105

110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val

115

120

125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro

130

135

140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys

145

150

155

160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg

165

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175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr

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190

Thr Met Arg Ser Pro

195

<210> 25

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 25

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360

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420

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480

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<210> 26

<211> 11

<212> PRT

<213> Hepatitis C virus

<400> 26

Gly Ser Val Val Ile Val Gly Arg Ile Val Leu

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